

ARGAY, Istvan, dr.; NEMECSKAY, Tivadar dr.

Experiences and results with 1019 vaginal hysterectomies. Magy.
nőorv. lap. 25 no.6:337-346 N '62.

1. A Borsod megyei Semmelweis Kórház (Igazgató: Dr. Pavlyak Pál) I.
Szülészeti-Nőgyógyászati osztályának (Főorvos: Nemeckay Tivadar dr.)
közleménye.

(HYSTERECTOMY)

ARGAY, Istvan, dr.; NEMECSKAY, Tivadar, dr.

Attempts to carry out the regional activities in prenatal and puerperal care in the district hospital of Borsod, Hungary. Nepegessegugy 44 no.3:75-81 Mr '63.

1. Közlemény a Borsod megyei Semmelweis Kórház I. szülészeti-nőgyógyászati osztályáról (főorvos: Nemeckay Tivadar dr. egyet. m. tanár).

(PRENATAL CARE)	(INFANT CARE)	(PUERPERIUM)
(STATE MEDICINE)	(INFANT MORTALITY)	(MATERNAL MORTALITY)

ARGAY, Istvan, dr.; NEMECSKAY, Tivador, dr.

On birth control based on our 10 years abortion data. Crv.
hetil. 105 no.44:2067-2072 1 N '64.

1. Borsod megyei Korhaz, I. Szuleszet.Nogyogyaszat (foorvos:
Nemecskay Tivadar dr.).

NEMECZ, E.

"Iron Minerals in Bauxite." p. 333 (FOLYTANI KOZLONY. BULLETIN OF THE HUNGARIAN GEOLOGICAL SOCIETY, Vol. 83, no. 10/12, Oct./Dec. 1953, Budapest, Hungary)

SO: Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954/Uncl.

VIETNAM 2, F. 4 JAC

The iron minerals of bauxite. S. M. Kozlov (U.S.S.R.)
 China. *Yokkai*. *Vietnam*. *Hungary*. *Acad. Sci. Hung.* 2, 267-68 (1964) (in French). Chem. analyses
 and x-ray and differential thermal analyses show the pres-
 ence of hematite and gibbsite in bauxite from Urkut,
 Hungary, and Tungar Hill, India; hematite and kaolinite
 in bauxite from Sifernik, Slavonia; and hematite and goe-
 thite in bauxite from Gant, Hungary. Lepidocrocite was
 not found. Michael Fleischer

BT

Country : Hungary
 Ministry :

H-13

Ref. No. :

4644

Author : Nerecz, E.
 Institution :
 Title : Modifications of Silica

Ref. Pub. : Epitexmag, 1955, 10, No 7, 250-255

Abstract : Data are presented which refute the diagram of Fenner, as concerns the three principal modifications of silica: α -quartz - α -tridymite - α -cristobalite. In homogeneous crystalline phase the quartz is never converted to tridymite, but always forms cristobalite, even at a temperature not attaining the lower limit, according to Fenner, of 1470°. At the present time the number of known modifications of SiO_2 has been considerably increased. At a pressure up to 100 000 atmospheres there is produced a glass having a density 2.61. By utilization of high pressures there have been obtained the crystalline modifications -- coesite and keatite. Up to now 12 modifications of SiO_2 are known, of which 7

NEMECZ, Erno

Correlation between the microweight loss of crystals due to heating and the conditions of crystallization. Veszprem vegyip egy kozl 3 no.1/4:255-297 *59

1. Veszpremi Vegyipari Egyetem Asvanytan Tanszek.

S/058/63/000/001/055/120
A150/A101

AUTHOR: Nemecz, E., Bélafiné, Réthy Katalin

TITLE: Infrared spectroscopy of silicate minerals. I. Schistous and amorphous silicates

PERIODICAL: Referativnyi zhurnal, Fizika, no. 1, 1963, 22, abstract ID148
("Veszprémi vegyipari egyet. közl.", no. 4, 1961, 5, 287 - 301,
Hungarian; summaries in German, English and Russian)

TEXT: Discussed are the possibilities of using infrared spectroscopy for the investigation of schistous and amorphous silicate phases. The structure of the main band in the spectra of schistous silicates is in close connection with the structure character of the crystalline compound. The kind of the spectrum, however, may not be considered a characteristic feature with the help of which the phase could unambiguously be identified in all cases. The infrared spectroscopy permits the direct determination of the presence of a vitreous phase which reliably separates it from crystalline compounds. The use of the methods of infrared spectroscopy, together with the X-ray method and the method of differential

Card 1/2

Infrared spectroscopy of silicate minerals...

5/01/00/001/055/12
A160/A101

thermoanalysis may be considered justified for the phase analysis of crystalline compounds, and will find a more wider application.

[Abstracter's note: Complete translation]

Card 2/2

NEMECZ, Erno

Testing transformation velocity of semihydrate ($2 \text{ CaSO}_4 \cdot \text{H}_2\text{O}$)-
dihydrate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) by means of X-ray diffractometer.
Veszpremi vegyip egy kozl 6 no.1:111-115 '62

1. Veszpremi Vegyipari Egyetem Ásványtan Tanszék.

NEMECZ, E.

Thermal behavior of the adsorbed and interlaminar water content of montmorillonite. Acta geol Hung 6 no.3/4:365-388 '62.

1. Technical University, Veszprem.

NEMECZ, E.; VARJU, Gy.

Sodium bentonitization, clinoptylolitization and adularization
in the rhyolitic tuffs of the Szerencs piedmont area. Acta geol
Hung 6 no.3/4:389-427 '62.

1. Technical University, Veszprem (for Nemecz).

NEMETS. Erne [Erno Nemeecz]

Clay minerals of Hungary. Vest.Mosk.un.Ser.4: Geol. 19 no.5:62-69
S-O '64. (MJRA 17:12)

1. Zaveduyushchiy kafedroy mineralogii Vesprenskogo universiteta
khimicheskoy promyshlennosti, predsedatel' komissii po glinam
Vengernskogo geologicheskogo obshchestva.

NEMECZK, Jaroslav [Nemecek, Jaroslav]

Education of specialists to manage problems in inventive-
ness, rationalization, and industrial legal protection
in the Czechoslovak Socialist Republic. Przegł techn 85
no.35:5 30 Ag '64.

1. President, Office of Patents and Inventions of the
Czechoslovak Socialist Republic.

L 38608-66 T JK

ACC NR: AP6028259

SOURCE CODE: HU/OC28/65/012/002/0181/0188

AUTHOR: Nemedi, Laszlo (Budapest)

ORG: Public Health Station/headed by: V. Kapos/, Budapest (Egeszsegugyi Allomas)

TITLE: Studies of the aerobic enteric flora of infants

SOURCE: Academia scientiarum hungaricae. Acta microbiologia, v. 12, no. 2, 1965, 181-188

TOPIC TAGS: bacteria, bacteriology, biochemistry

ABSTRACT: An examination of 6890 fecal samples has shown that, with the exception of Staphylococci, facultatively pathogenic bacteria which can be cultured aerobically occurred at practically the same frequency in infants with and without enteric symptoms. No significant difference was found with respect to the incidence of "dysbiotic" fecal samples in which the number of these organisms exceeded the usual relative coli counts. Facultative pathogens which can be identified more precisely by serological and biochemical methods were also evenly distributed between the two groups of infants. The author thanks Mrs. I. Vally for help in collecting statistical data. Orig. art. has: 4 figures and 3 tables. [Orig. art. in Eng.] [JPRS: 33,500]

SUB CODE: 06 / SUBM DATE: 25Feb65 / ORIG REF: 007 / CTH REF: 004

Card 1/1

HEMEDOVA, M.A.; AMBARTSUMYAN, M.S.

Nurses' councils. Med. sestra 18 no.3:46 Mar '59. (MIRA 12:3)

1. Sovet meditsinskikh sester 1-go meditsinskogo ob'yedineniya
Leninakan.
(NURSES AND NURSING)

REESY, R.

METHODS OF SURVIVAL STUDIES IN THE APPLIED FIELD OF MEDICINE

p 22 (KOTLENELESTI, A. I. (ED)) BUDAPEST, HUNGARY V. 7 1971/2 1971/2 1971/2

S. MONTHLY INDEX OF EAST EUROPEAN JOURNALS (AUSTRIA) V. 11 1971/2 1971/2 1971/2

TÓTH, Marit, dr.; NEMÉDY, Edit, dr.

Differential diagnostic problems of dysentery based on our
5 year hospital material. Orv. hetil. 106 no.23:1083-1084
6 Ju '65

1. Balassagyarmati Tóthsi Tünde, dr., Fertőszécsényi
(vezető orvos: Kass, Tabor, dr.)

MOZSONYI, S.:HEMEDY, I.

The preparation of calcium phosphate. *Gyogyaszeres* 6 no. 10:237-
238 Oct 1951. (CML 23:5)

HUNGARY/Chemical Technology. Chemical Products and Their
Application. Medicinals. Vitamins. Antibiotics.

H-17

Abs Jour: Ref Zhur-Khin., No 13, 1958, 44301.

Author : Nemedy Imre, Varnadi Jozsefne.

Inst :

Title : Preparation of Sterile Medicinal Solutions.

Orig Pub: Gyogyszeresz, 1956, 11, No 2, 27-29

Abstract: The liquid being sterilized reaches a temperature of 100 several (T) minutes later than the steam-filled space or the water bath into which is placed the vessel containing the liquid, and this must be taken into account on determining the actual beginning of sterilization. For example, in the case of a vessel 33 cm high and 16 cm in diameter, con-

Card : 1/2

HUNGARY/Chemical Technology. Chemical Products and Their
Application. Medicinals. Vitamins. Antibiotics.

E-17

Abs Jour: Ref Zhur-Khim., No. 13. 1956, 44301.

taining M grams of water, the correlation between
M and T will be M=100, 200, 300, 500, 1000 g;
T = 6, 6, 8-9, 13-14, 18-19 minutes.

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NEMEDY, Lajos

Construction craftsmen in the concrete factory. Magyar Kisipar 7 no.1:
6 10 Ja '63.

1. Komuvesmester, Budapest.

KENDE, Eva; NEMEDI, László

Presence of some unusual enteric bacteria in diarrheas in infants.
Gyermekgyógyászat 13 no.5:145-150 My '62.

1. Budapest Fővárosi Közegészségügyi-Járványügyi Allomás.

(DIARRHEA in inf & child)

2303. PALEO-GEOLOGICAL AND STRATIGRAPHICAL STUDIES IN EASTERN
CORNER OF COALFIELD OF KALINOV AND KALINOVSK (SUMMARY OF
CZECH TEXT). Mamaj, P. (Sborn. geol. ust. cal.,
Prague, 1947, vol. 14, 40b-416).

NEMEJC, F.

"Taxonomická studie o plodních staticích Calamitacei ze středoceskyh kamenouhelných pánvi. Taxonomical studies on the fructifications of the Calamitaceae collected in the coal districts of Central Bohemia. Praha, Nakl. Národního muzea, 1953. 62 p. (Prague, Národní museum. Sborník, vol. 9-B (1953) no. 1. Geologia et palaeontologia, no 1) (In English with Czech and Russian summaries, illus., bibl.)

SO: East European Accessions List, Vol 3, No 8, Aug 1954.

NEDEJC, F.

"Significance of Dionys Stur's Work in Paleobotanical Studies of Central Europe." p. 59 (GEOLOGICKY SBORNÍK. Vol. 4, No. 1/2, 1953; Bratislava, Czech.)

So: Monthly List of East European Accessions, (EEAL), LC, Vol. 1, No. 4, April 1955, Encl..

NEMEJC, F.

"Upper Cretaceous Plant Element in the Fossil Flora of the Tertiary in South Bohemia", P. 1, (SBORNÍK. ODDÍL PALEONTOLOGICKÝ, Vol. 20, 1953, Praha, Czech.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 3, Mar 1955, Uncl.

NEMEJC, F.

"Plant Remains Collected in the Clayish Interlayers of the Neocene Accumulations at Hlavacov Near Rakovnik", P. 13, (SBORNIK. ODDIL PALEONTOLOGICKY, Vol. 20, 1953, Praha, Czech.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 3, Mar 1955, Uncl.

NEMEJC, F.

"Evolution of Tertiary Flora and Its Relation to Contemporary Vegetation." p. 3 (CASOPIS;
ODDIL PŘÍRODOVEDNÝ, Vol. 122, No. 1, 1953) Prague, Czechoslovakia

SO: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 4,
April 1954. Unclassified.

NEMEJC, F.

Taxonomicke studie o plodnich sistich Lepidodendracei (Lepidostrobus Bgt.
incl. Lepidostrotophyllum Hirmer) stredoceskyh kamenouhelných panvi.
Taxonomical studies on the strobili of the Lepidodendraceae of the coal
districts of Central Bohemia. Praha, Nakl. Narodniho musea, 1954.
p. 83 (Prague. Narodni museum. Sbornik. B. Prirodovedny, v. 10, no. 5)
In English with Czech and Russian summaries. illus., bibl., tables

NEMEJC, F.

"Paleobotanic study of the stratigraphy of deposits in the basin of southern Bohemia."

SBORNIK, ODDIL PALEONTOLOGICKY, Praha, Czechoslovakia, Ustredni ustav geologicky.
Vol. 22, 1955.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 8, August 1959.
Uncl.

NEMEIC, F.

"The age of the Neocene deposits in the valley of the Turec River as determined from the viewpoint of paleobotany."

p. 261 (Casopis Pro Mineralogii A Geologh. Vol. 2, no. 3, 1957., Czechoslovakia)

Monthly Index of East European Accessions (IEAI) LC. Vol. 7. No. 2,
February 1958

NEMEJC, F.

A contribution to the knowledge of the biostratigraphic conditions in the eastern part of South Bohemian Basin. p. 317

Prague. Ustredni ustav geologicky. VESTNIK. Praha, Czechoslovakia, Vol. 33, no. 5, 1958

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959
Uncl.

1950, 7.

"Significance of fossil flora found in the bed of the Lower River for the stratigraphy of the South Bohemian basin."

Geosopis PRO. LITHOLOGICAL. (1950), Praha, Czechoslovakia, Vol. 3, No. 2, 1950.

Monthly list of EAST AFRICAN GEOLOGICAL SURVEY (1950), Library of Geology, Vol. 3, No. 8, August, 1950.

Thomas, 1950.

NEMEJC, Frantisek

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: /Prof, Dr/

Affiliation: /not given/

Source: Prague, Casopis pro Mineralogii a Geologii, Vol VI, No 3, 1961,
pp 297-300.

Data: "Plant Fossils in the Tertiary of Eastern Bohemia."

NEMEJC, Frantisek /reviewer/; KNEBLOVA, V. /author/
SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: Prof, Dr./reviewer/; author /not given/

Affiliation: /Faculty of Natural History, Charles University (Přirodovědecká
fakulta Karlovy university), Prague/

Source: Prague, Casopis pro Mineralogii a Geologii, Vol VI, No 3, 1961,
p. 394.

Data: "The Peleobotanical Study of the Interglacial Travertines in Ganovce
(Paleobotanický výzkum interglaciálních travertínů v Ganovcích)"

GPO 981643

NAME: Frantisek

SURNAME (in caps); Given Names

Country: Czechoslovakia

Academic Degrees: /not given/

Affiliation: Faculty of Natural Sciences (Physics and Chemistry)
/Masaryk University, Charles University, Prague.

Source: Prague, Vestník Středního Ústavu Geologického, Vol XXVI,
No 3, 1961, pp 203-206.

Data: "Paleobotanical and Stratigraphical research in the region
of Kosice, Eastern Slovakia, Performed in 1959."

272

1910, 1.

1910-1911

"1910-1911"

BOUSKA, Vladimir; NEMEJC, Frantisek; KETTNER, Radim, akademik; KOCAREK, Eduard,
TRDLICKA, Zdenek

Some geological anniversaries. Cas min geol 8 no.4:396-407 G '63.

1987, 1988, 1989

NEMEJC, F.

Faculty of Natural Sciences of Charles University (Přírodovědecká fakulta Karlovy university), Prague

Prague, Časopis pro mineralogii a geologii, No 1, 1964, pp. 107-109

"Biostratigraphical Sequence of Floras in the Tertiary of Czechoslovakia."

NE HJG, Prantisek

biostratigraphica sequentia in the Tertiary of Czechoslovakia. Cas min 1951. 1. 1951. 1951.

1. Faculty of Natural Sciences, Charles University.

NEMEJCOVA, ~~MARSAKOVE~~, M

Causes of forest fires. p.277. Vol. 10, no.9, Nov. 1955, Ochrana
Prirody.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March 1956.

NEMEJCOVA-MARSKOVA, M.

Myxomatosis and its spreading. (To be contd.)

P. 121.(Ochrana Prirody. Vol. 12, no. 4, May 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958

SLIPCHENKO, P.S., glav. red.; KUCHERENKO, K.R., red.; FILONENKO, K.I., red.; LESNAYA, A.A., red.; ADYZOV, A.G., red.; BUDNIKOV, M.S., red.; VETROV, Yu.A., red.; GLADKIY, V.I., red.; GOLOSOV, V.A., red.; IZMAYLOV, V.G., red.; KANYUKA, N.S., red.; KAPOV, E.A., red.; KLINDUKH, A.M., red.; KUSHNAREV, N.Ye., red.; LUYK, A.I. kand. tekhn. nauk, red.; NEMENKO, L.A., red.; RYBAL'SKIY, V.I., red.; SITNIK, I.P., red.; FEDOSFENKO, N.M., red.; FILAKHTOV, A.L., kand. tekhn. nauk, red.; KHILOBOCHENKO, K.S., red.; VORONKOVA, L.V., red.; KIYANICHENKO, N.S., red.

[Construction industry: technology and mechanization of the construction industry; the economics and organization of construction] Stroitel'noe proizvodstvo: tekhnologiya i mekhanizatsiya stroitel'nogo proizvodstva; ekonomika i organizatsiya stroitel'stva. Kiev, Budivel'nyk, 1965. 180 p. (MIRA 18:4)

1. Nauchno-issledovatel'skiy institut stroitel'nogo proizvodstva. 2. Nauchno-issledovatel'skiy institut stroitel'nogo proizvodstva (for Luyk, Filakhtov).

NEMENMAN, L. Z.

~~SECRET~~ (S)

PHASE I BOOK EXPLOITATION 337/5410

Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii. Tashkent, 1959.

Trudy (Transactions of the Tashkent Conference on the Peaceful Use of Atomic Energy) v. 2. Tashkent, Izdat. AN UzSSR, 1960. 449 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk Uzbekskoy SSR.

Responsible Ed.: S. V. Starodubtsev, Academician, Academy of Sciences Uzbek SSR. Editorial Board: A. A. Abdullayev, Candidate of Physics and Mathematics; D. M. Abdurazulov, Doctor of Medical Sciences; U. A. Arifov, Academician, Academy of Sciences Uzbek SSR; A. A. Borolulima, Candidate of Biological Sciences; V. K. Ibratov; G. S. Ikramova; A. Ye. Kiv; Ye. N. Ibratov, Candidate of Physics and Mathematics; A. I. Nikolayev, Candidate of Medical Sciences; D. Hishanov, Candidate of Chemical Sciences; A. S. Sadykov, Corresponding Member, Academy of Sciences USSR, Academician, Academy of Sciences Uzbek SSR; Yu. N. Talanin,

Card 1/20

Transactions of the Tashkent (Cont.)

SCV/5-10

Candidate of Physics and Mathematics; Ya. Ki. Turakulov, Doctor of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G. Babakhanova.

PURPOSE: The publication is intended for scientific workers and specialists employed in enterprises where radioactive isotopes and nuclear radiation are used for research in chemical, geological, and technological fields.

COVERAGE: This collection of 153 articles represents the second volume of the Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy. The individual articles deal with a wide range of problems in the field of nuclear radiation, including: production and chemical analysis of radioactive isotopes; investigation of the kinetics of chemical reactions by means of isotopes; application of spectral analysis for the manufacturing of radioactive preparations; radioactive methods for determining the content of elements in the rocks; and an analysis of methods for obtaining pure substances. Certain

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Transactions of the Tashkent (Cont.)

SOV/5410

instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

RADIOACTIVE ISOTOPES AND NUCLEAR RADIATION
IN ENGINEERING AND GEOLOGY

Lobanov, Ye. M. [Institut yadernoy fiziki UzSSR - Institute of Nuclear Physics AS UzSSR]. Application of Radioactive Isotopes and Nuclear Radiation in Uzbekistan

7

Taksar, I. M., and V. A. Yanushkovskiy [Institut fiziki AN Latv SSR - Institute of Physics AS Latvian SSR]. Problems of the Typification of Automatic-Control Apparatus Based on the Use of Radioactive Isotopes

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Card 3/20

Transactions of the Tashkent (Cont.)

SCV/5410

Portnovskiy, Ye. S., and H. D. Lerman [Vsesoyuznyy nauchno-issledovatel'skiy institut zerna - All-Union Scientific Research Institute of Grain]. Gamma-Ray Level Gages for Flour Mills and Combined Fodder Plants.

262

Abramov, I. G., and L. Z. Nemennan [Gosudarstvennyy institut po projektirovaniyu predpriyatiy tsementnoy promyshlennosti i nauchno-issledovatel'skim i eksperimental'naya rabota v oblasti proizvodstva tsementa - State Institute for the Design and Planning of Establishments of the Cement Industry and Scientific Research and Experimental Work in the Field of Cement Production]. A Possible Continuous Remote Control of Slime Level in Slime Pits by Means of a Gamma-Relay System

266

Ieyzanskaya, D. I., R. A. Rezvanov, and V. I. Drynkin [Institute of Geology and Production of Mineral Fuels AS USSR]. Application of Neutron Activation Analysis in Geology

269

Iepovsk, T. A. [Institute of Geology and Production of Mineral Fuels AS USSR]. Neutron Breeder for Activation Analysis
Card 13/20

25 (5)

SOV/101-59-5-3/11

AUTHORS: Abramson, I. G. and Nemenman, L. Z.

TITLE: A Possible Method of an Uninterrupted Remote Control of the Level of the Slurry in Slurry Tanks

PERIODICAL: Tsement, 1959, Nr 5, pp 6 - 9 (USSR)

ABSTRACT: The authors state that practical use of the above method is an important part of the problem of automation of an enterprise. Such control is indispensable for an exact checking of the consumption of the raw material and the output volume. At present, the measurement of the slurry level is performed mainly by immersing heavy weights into the tanks containing slurry. Such a procedure has many disadvantages. The zavod "Kalugapribor" ("Kalugapribor" Factory) has produced radioactive level-meters, but they are unreliable and not suited for use with a thick medium as slurry. The authors propose a system of an uninterrupted remote control of the level of the slurry, in tanks of any size, using a simple gamma-relay circuit (various types of the device are already used in the industry), with a hydraulic drive. The principle of the

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SOV/101-59-5-3/11

A Possible Method of an Uninterrupted Remote Control of the Level of the Slurry in Slurry Tanks

project consists in an electronic scheme (Figure 1), which acts by means of magnetic pushers upon a regulating sliding valve, operating the hydraulic drive. The regulating process is recorded on the dial indications receiver. The authors conclude that the proposed regulation scheme will increase the productivity standard. There is 1 diagram.

Card 2/2

NEMENMAN, M. Z.

Dissertation: "Some Questions of the Torsion of Shafts." Cand Tech Sci, Odessa Polytechnic Inst, Odessa, 1954. Referativnyy Zhurnal--Mekhanika, Moscow, Jul 54.

SO: SUM No. 350, 25 Jan. 1955

SOV/124 58 4 4421

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 4 p 164 (USSR)

AUTHOR: Nemenman, M. Z.

TITLE: The Determination of Torsionally Produced Stresses in Curvilinearly-tapered Portions of Axisymmetric Shafts (Opredeleniye napryazheniy v krivolineynykh perekhodakh pri kruchenii osesimmetrichnykh valov)

PERIODICAL: Sb. nauchno-tekhn. rabot. Azovo-Chernomorsk in t mekhaniz. i elektrifik. s. kh., 1957, Nr 9, pp 193-197

ABSTRACT: The article does not contain any new results. It is almost a literal repetition of a part of the work of Willers (Willers F. A., Z. Math. und Phys., 1907, Vol 55). The author makes a reference to the latter article.

K. V. Solyanik Krassa

1. Shafts--Torque 2. Shafts--Stresses 3. Mathematics

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SOV/124-58-5-5710

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 112 (USSR)

AUTHOR: Nemenman, M. Z.

TITLE: Torsional Stress on Ovaloid Shells (Krucheniye ovaloidnoy obolochki)

PERIODICAL: Sb. nauchno-tekhn. rabot. Azovo-Chernomorsk. in-t mekhaniz. i elektrifik. s. kh., 1957, Nr 9, pp 255-257

ABSTRACT: It is pointed out that the stress function of the torsional problem of shafts with variable cross section

$$\Phi = c \left\{ \left[(z-a)^2 + r^2 \right]^{3/2} + \left[(z+a)^2 \right]^{3/2} \right\}$$

is in fact the solution of the problem of torsional stress in a shell of variable thickness, the surfaces of which are formed by the revolution of two curves (of the $\Phi = \text{const}$ family) about the z axis. This assertion is true only for an open shell (with cut-outs which exclude the z axis from the shell configuration) which fact is not mentioned by the author.

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1. Structural shells--Stresses

K. V. Solyanik-Krassa

SOV/124-58-10-11414

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 104 (USSR)

AUTHOR: Nemenman, M.Z.

TITLE: Graphic Determination of Stresses in the Twisting of Axisymmetric Shafts (Graficheskiy sposob opredeleniya napryazheniy pri kruchenii osesimmetrichnykh valov)

PERIODICAL: Sb. nauchno-tekhn. rabot Azovo-Chernomorsk. in-ta mekhaniz. s.-kh., 1957, Nr 10, pp 293-296

ABSTRACT: The major propositions of Willers' well-known work (Willers, F.A., Z. Math. und Phys., 1907, Vol 55) are presented. The author apparently does not know that a presentation of this work in the Russian language may be found in the volume by S.P. Timoshenko and J. Lessells [Prikladnaya teoriya uprugosti (Applied Elasticity Theory), Moscow, Gostekhizdat, 1931].

K.V. Solyanik-Krassa

Card 1/1

NEMENOV, A.M.

Production of ferrous and nonferrous metals directly from
ores. Biul. tekhn.-ekon. inform. Gos. nauch.-issl. inst. nauch.
i tekhn. inform. 17 no.4:78-79 A: 104. (MIRA 17 6)

11. 11. 11. A.G.; No. 11. 11. 11.

development of steel, melting of the hard process and
Plul. tekh.-econ. inform. Gos. nauch.-issl. inst. nauch.
i tekh. inform. U no. 11. 11. 11. Ag 11. 11.

(11. 11. 11.)

NEMENOV, A.Ya.

"Health Day" and physical culture. Zdrav.Ros.Fed. 3 no.10:13-15 0 '59.
(MIRA 13:1)

1. Glavnyy vrach Tul'skogo oblastnogo vrachebno-fizkul'turnogo dis-
panesera.

(TULA PROVINCE--PHYSICAL EDUCATION AND TRAINING)

NEMENOV, Aleksandr Yakovlevich; DMITRIYEV , Yevgeniy Ivanovich
KUKOLEVSKIY, G.M., red.; PETROVA, N.K., tokhn. red.

[Provision for medical aid at sports competitions; the
problems of organization] Meditsinskoe obespechenie sportiv-
nykh sorevnovaniy; voprosy organizatsii. Moskva, Medgiz,
1962. 172 p. (MIKA 15:10)

(SPORTS MEDICINE)

BLOKHINTSEVA, T.D.; VASILENKO, A.T.; GREBINNIK, V.G.; ZHUKOV, V.A.;
LIEMAN, G.; NEMENOV, L.L.; SELIVANOV, G.I.; YUAN' ZHUN-FAN
[Yuan Jung-fang]

[Eight-liter hydrogen-deuterium bubble chamber in a magnetic
field] Vos'militrovaia vodorodno-deiterievaia puzyr'kovaia
kamera v magnitnom ple. Dubna, Ob"edinennyi in-t iadernykh
issl., 1961. 20 p. (MIRA 15:1)
(Bubble chamber) (Magnetic fields)

IVEMENOV, L. L.

BLOKHINNEVA, T. D., MEDVINKA, V. T., LIDMAN, G., NEMENOV, L. L., SELIVANOV, G. I.
YUNG-PANG, Yunn, ZHANG, V. A.

" π^- -Meson Interaction with Hydrogen at 340 Mev"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Inst. for Nuclear Research
Lab. of Nuclear Problems

BLOKHINTSEVA, T.D.; GREBINNIK, V.G.; ZHUKOV, V.A.; LIBMAN, G.;

MESENOV, L.; SELIVANOV, G.I.; YUAN' ZHUN-FAN

[Yuan Jung-fang]; SARANTSEVA, V.R., tekhn. red.

[Interaction between π^- -mesons and hydrogen at an energy of 340 Mev] Vzaimodelstvie π^- -mezonov s vodorodom pri energii 340 Mev. Dubna, Ob"edinennyyi in-t iadernykh issl., 1962. 27 p. (MIRA 15:10)

(Nuclear reactions) (Mesons) (Hydrogen)

MEMORV, L. L.

AUTHORS: Blokhint, V., T., L., A.T., Gribinski, V.G.,
Zharov, V.A., L., T., A.T., Gribinski, V.G.,
Sullivan, G.T., L., T., A.T., Gribinski, V.G.

TITLE: An analysis of the "sublimation bubble" on the "red" map of the North

PERIODICAL: Prihory i tekhnika dlya eksperimenta, no.5, 1959, 51-59

TEXT: A detailed description of the apparatus is given. Essentially it consists of two concentric cylinders, the inner space being the working volume and the outer space for the expansion control. The inner cylinder is of copper to improve heat transfer and the outer cylinder, together with part of the jacket, is constructed from DUKHOT (DILKOT) stainless steel. Observation ports at the end of the inner cylinder consist of discs of ЛК-5 (LK-5) glass 10 mm thick and with an aperture of 280 mm. Detailed drawings are given of the expansion apparatus and the associated two-stage double-acting electro-magnetic valve. The normal gas pressure is 7 atm and the gas flow rate is 7 atm and the degree of expansion can be altered by changing the Card 1/2

An eight litre hydrogen

quantity of 11.5

electric lamp

details of the

study system

for liquid hydrogen

the working volume

standard MC-4

liquid nitrogen

Cracks were of

time was less than

with liquid hydrogen

During operation

consumed. A

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NEMENOV, L.L.

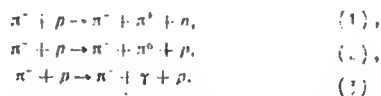
34 6700

AUTHORS: Flokhintseva, T. D., Groblonik, V. G., Dmit'ev, V. A.,
Libman, G., Nemenov, L. L., Solov'ev, G. I., et al.

TITLE: Measurement of the total cross section of the $(\pi^- p)$ reac-
tion with 340-Mev π^- -mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
no. 3, 1962, 912-915

TEXT: The reactions



have been studied at energies of the primary π^- mesons of 340 ± 15 Mev with the aid of a 25-cm liquid-hydrogen chamber in a magnetic field of 12,000 oo. The respective total cross sections were determined as $\sigma_1 = 1.24 \pm 0.14$ mb, $\sigma_2 = 0.13^{+0.06}_{-0.04}$ mb, $\sigma_3 = 0.09^{+0.03}_{-0.06}$ mb. In the

Card 1/1

Measurement of the total cross ...

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determination of the cross section of reaction (1) only cases where the energy of the emitted gamma quantum was higher than 100 MeV were considered. In order to obtain a representation of the contribution of the different isotopic states in the cross sections of the reactions (1) and (2), the latter are written down in the form

$$\sigma_1 = \frac{1}{6} \left[\frac{1}{5} |A_1^0|^2 - \frac{2}{5} \sqrt{\frac{2}{5}} \operatorname{Re}(A_1^0 A_1^0) + 2 |A_1^0|^2 \right] + \frac{1}{6} |A_1^0|^2 - 2 \operatorname{Re}(A_1^0 A_1^0) + |A_1^0|^2,$$

$$\sigma_2 = \frac{1}{10} |A_1^0|^2 + \frac{1}{6} \left[\frac{1}{2} |A_1^0|^2 + 2 \operatorname{Re}(A_1^0 A_1^0) + 2 |A_1^0|^2 \right],$$

where A_k^i denotes the invariant isotopic amplitudes (superscript refers to total isotopic spin of entire system, subscript denotes total isotopic spin of the system of two pions). The cross sections of the reactions (1) and (2) permit with some assumptions to infer the following about the magnitudes and phases of the isotopic amplitudes: (a) if the amplitudes

Card 2/4

Measurement of the total cross ...

5/ 2/ 1970, 1971, 1972, 1973
11/ 1/ 1971

$A_1^{1/2}$ and $A_1^{3/2}$ are zero, then the $A_0^{1/2}$ will be considerably smaller than $A_0^{1/2}$: $5.1|A_2^{1/2}|^2 \leq |A_0^{1/2}|^2 \leq 5.7|A_1^{1/2}|^2$; (b) if it is considered that a_1 and c_2 are determined mainly by $A_1^{1/2}$ and $A_1^{3/2}$, then the phase shift of these amplitudes is about 180° , and their moduli are connected by the relation $|A_1^{3/2}| \approx 2|A_1^{1/2}|$. For incident pion energies of 340 Mev the maximum total energy (c.m.s.) of the pions is 4 Mev. If the case (a) applies, one may state that the pions in the $\pi^+ \pi^-$ pairs produced by will interact mainly in states with total isospin a_1 in $T = 1$ and not with $T = 2$. Professor B. M. Pontekorva and L. V. Yermolov are thanked for advice and discussions. There are 5 references, 2 Soviet and 3 non-Soviet. The references to English-language publications read as follows: J. Deuhl et al. Proc. of the 1960 Ann. Int. Conf. on High Energy Phys. at Rochester, 1960, p. 105; H. J. Schmitt. Preprint, 1961; B. C. Barish et al. Bull. Amer. Phys. Soc., II, 6, 523, 1961.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

Card 3/4

37677

S/056/62/042/005/022/050

3102/3104

AUTHORS: Nemenov, L. L., Solov'yev, L. D., Khomskiy, D. I.

TITLE: The role of the biphion in the generation of a pion in nucleon-nucleon collisions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 5, 1962, 1283-1284

TEXT: Hitherto only single-meson graphs have been considered when calculating pion generation in N-N collisions (Phys. Rev., 123, 669, 1961). In this paper, the contribution of "biphion" graphs to the differential cross-section of the reaction $N + N \rightarrow \pi + N + N$ is calculated. Attention is confined to incident nucleons of energies between 600-1500 Mev, so that the energy of the nucleon and meson in the final state lies close to the (33) -resonance energy, and therefore their interaction need only be considered in the resonant state. It follows from the law of the conservation of isotopic spin that the particles must have $T = 1$ in the intermediate state. For $T = J = 1$ and an energy of 4.7μ (μ -pion mass), two mesons are in resonant interaction, so the resonant state plays the

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The role of the biphion in ...

dominant role in the biphion exchange discussed here. The reaction $p + p \rightarrow \pi^+ + p + n$ is considered and the biphion contribution is calculated. Given that the incident proton is at a high energy level and is scattered through a small angle, we obtain

$$\begin{aligned} & \{ \sqrt{2\pi} (\mathcal{E} + 2M) \omega \epsilon^{l_{33}} \sin \delta_{33} / M^2 q^2 \} [(\rho_2^0 + M)(\rho_2^0 + M)/4M^2]^{1/2} \times \\ & \times \chi^*(\rho_1^0) \{ 2 |qk| + i(kq)\sigma - i(ok)q \} \chi(\rho_1) \times \\ & \times \chi^*(\rho_2^0) \sigma \left[\frac{\sigma \rho_2}{\rho_2^0 + M} + \frac{\sigma \rho_2}{\rho_2^0 + M} \right] \chi(\rho_2) (m_B^2 - k^2)^{-1}. \end{aligned} \quad (3).$$

Here p_1 and p_2 are the momenta of the protons (p_2 is that of the target proton) q is that of the final proton, neutron and π^+ meson; $\vec{p}_1 + \vec{q} = 0$, $\sigma = p_1^0 + q^0$; M is nucleon mass, χ are two-component spinors; $\tau^2 = 0.08$; m_B is the biphion mass; $\mathcal{E}$ and μ stand for the isotopic-vectorial charge and the magnetic moment of the nucleon; with $(\mathcal{E} + 2M/\mu)^2 = 466$, $m_B^2 = 22.4$ and a formula by Hohler (Nuovo Cim., 16, Card 2/3

The role of the biphon in ...

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B102/B104

505, 1960) for the δ -33 phase, the cross-section was calculated and compared with that for a single-meson graph. It was found that up to 2 Bev the contribution of the biphon graph does not exceed 9-10% of the contribution of a single meson. It increases monotonically with the initial energy. There is 1 figure.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: December 9, 1961

Card 3/3

BLOKHINTSEVA, T.D.; GERBINNIK, V.G.; ZHUKOV, V.A.; LIBMAN, G.; NEMENOV, L.L.;
SELIVANOV, G.I.; YUAN' ZHUN-FAN

Interaction between 340 Mev. π^- -mesons and hydrogen. Zhur. eksp.
i teor. fiz. 44 no.1:116-126 Ja '63. (MIRA 16:5)

1. Ob'yedinennyy institut yadernykh issledovaniy.
(Nuclear reactions) (Mesons) (Hydrogen)

S/055/63/044/002/019/065
B102/B186

AUTHORS: Blokhintseva, T. D., Grebinnik, V. G., Zhukov, V. A.,
Libman, G., Nemenov, L. L., Selivanov, G. I., Yuan Jung-fang

TITLE: The total π^-p -reaction cross-sections at π^- energies of
276 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 2, 1963, 498-499

TEXT: The total cross-sections of the reactions $\pi^- + p \rightarrow \pi^- + \pi^+ + n$ and
 $\pi^- + p \rightarrow \pi^- + \pi^0 + p$ were measured at $E_{\pi^-} = 276 \pm 10$ Mev in the lab system
in a 25-cm liquid-hydrogen bubble chamber placed in a magnetic field.
Among 6000 photographs made 5 events of the first, and one of the second
reaction were found. The cross sections were:

$$\sigma_1 = 0.4^{+0.2}_{-0.3} \text{ mb} \quad \text{and} \quad \sigma_2 = 0.08 \pm 0.08 \text{ mb.}$$

The results are in close agreement with the theoretical predictions of
~~Gandz~~ H. Schnitzer.

JOINT INST. OF NUCLEAR RESEARCH

MESHCHERYAKOV, V.A. NEMENOV, L.L.; SOLOV'YEV, L.D.

The $\pi + N \rightarrow \pi + N$ reaction and the constants of photoproduction
of π -mesons on π -mesons. Zhur. eksp. i teor. fiz. 45 no.4:1188-
1191 0 '63. (MIRA 16:11)

1. Ob"yedinennyi institut yadernykh issledovaniy.

BLOKHINTSEVA, T.D.; GREBENNIK, V.G.; ZHUKOV, V.A.; KRAVTSOV, A.V.; LIBMAN, G.;
NEMENOV, L.L.; SELIVANOV, G.I.; YUAN' ZHUN-FAN [Yuan Jung-fang]

Determining the contribution of the $3/2, 3/2$ isobar to inelastic
 π -p-interaction processes at the η -meson kinetic energy of 34
Mev. IAd. fiz. 1 no.1:103-112 Ja '65. (MIRA 18:7)

1. Ob'yedinennyy institut yadernykh issledovaniy.

L 1996-66 ENT(=)/EWA(h)

ACCESSION NR: AP5020263

UN/C967/65/002/001/0124/0130

AUTHOR: Meshcheryakov, V. A.; Kamenov, L. L.; Solov'yev, L. D.; Strohach, P.;
Thebachava, I. G.

TITLE: Mechanism of emission of hard γ quanta in the reaction $\pi + n \rightarrow \pi + \gamma + N$

SOURCE: Yadernaya fizika, v. 2, no. 1, 1965, 124-130

TOPIC TAGS: photon emission, pion proton interaction, nuclear interaction, pion
pion interaction

ABSTRACT: The authors analyze the mechanism of hard-photon emission when pions interact with nucleons. The contributions of different Feynman diagrams to the cross section of this process are first analyzed, and it is shown by comparison with experimental data that various contributions and interferences of the high-order diagrams can be neglected. From the experimental data on the reaction $\pi^- + p \rightarrow \pi^- + \gamma + p$ the authors determine the interaction constant for the reaction $\gamma + \pi \rightarrow \pi + \pi$, and find it to be equal to $C^2 = 0.9 \pm 0.3$. Only the single-meson diagrams are taken into account, and the contribution of diagrams with rescattering are neglected. Diagrams in which γ quanta are emitted by nucleons are likewise neglected. The solution of the dispersion equation for the amplitude of the process in question is obtained in this paper as a function of only a single constant,

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ACCESSION NR: AF020263

which facilitates the analysis of experimental data, inasmuch as they are too scanty for the determination of two constants. "The authors thank B. M. Pontecorvo for interest in the work and L. I. Lapidus for valuable hints." Orig. art. has: 3 figures and 22 formulas. 155 9 44.55

ASSOCIATION: Ob'yedinenyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

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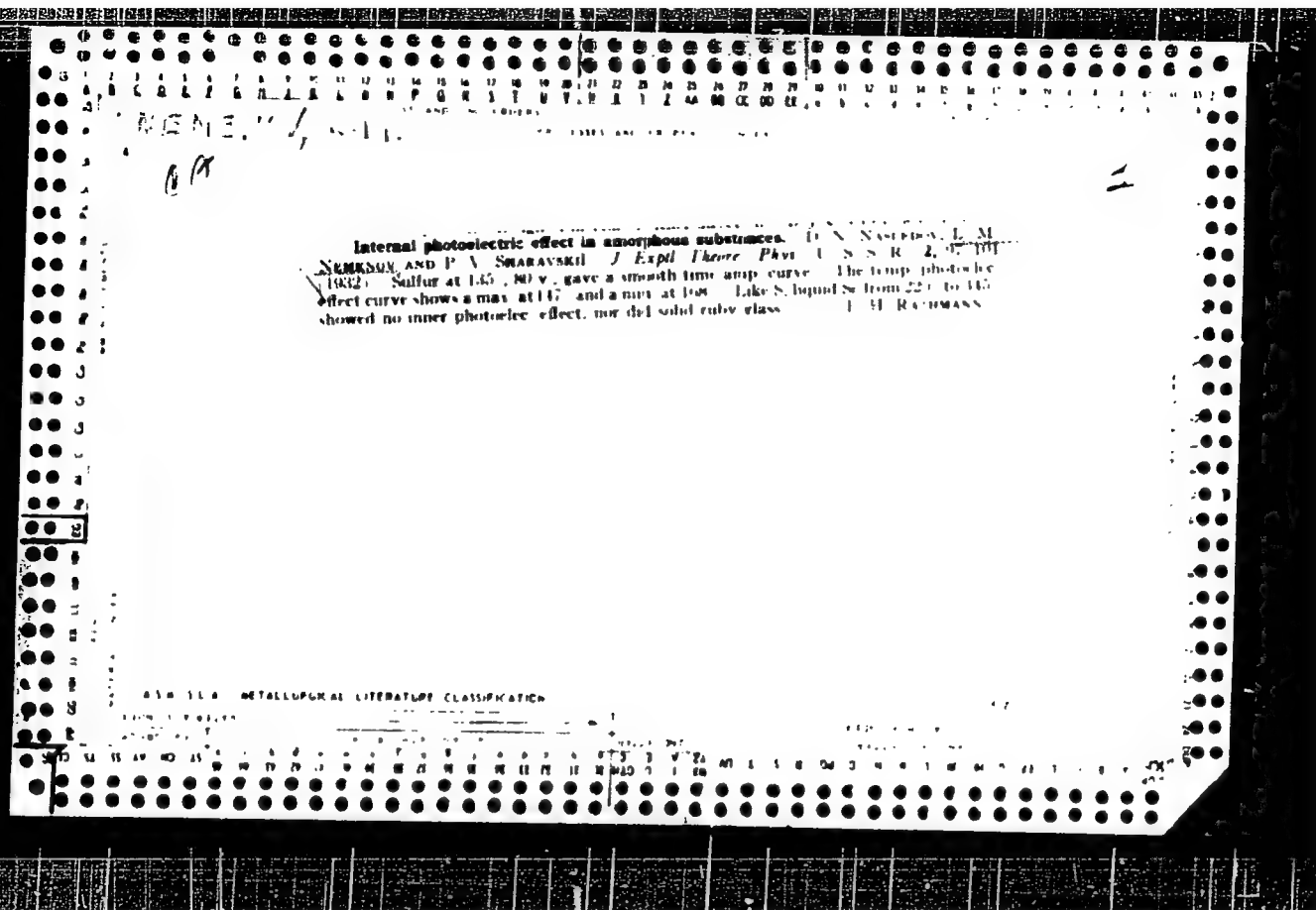
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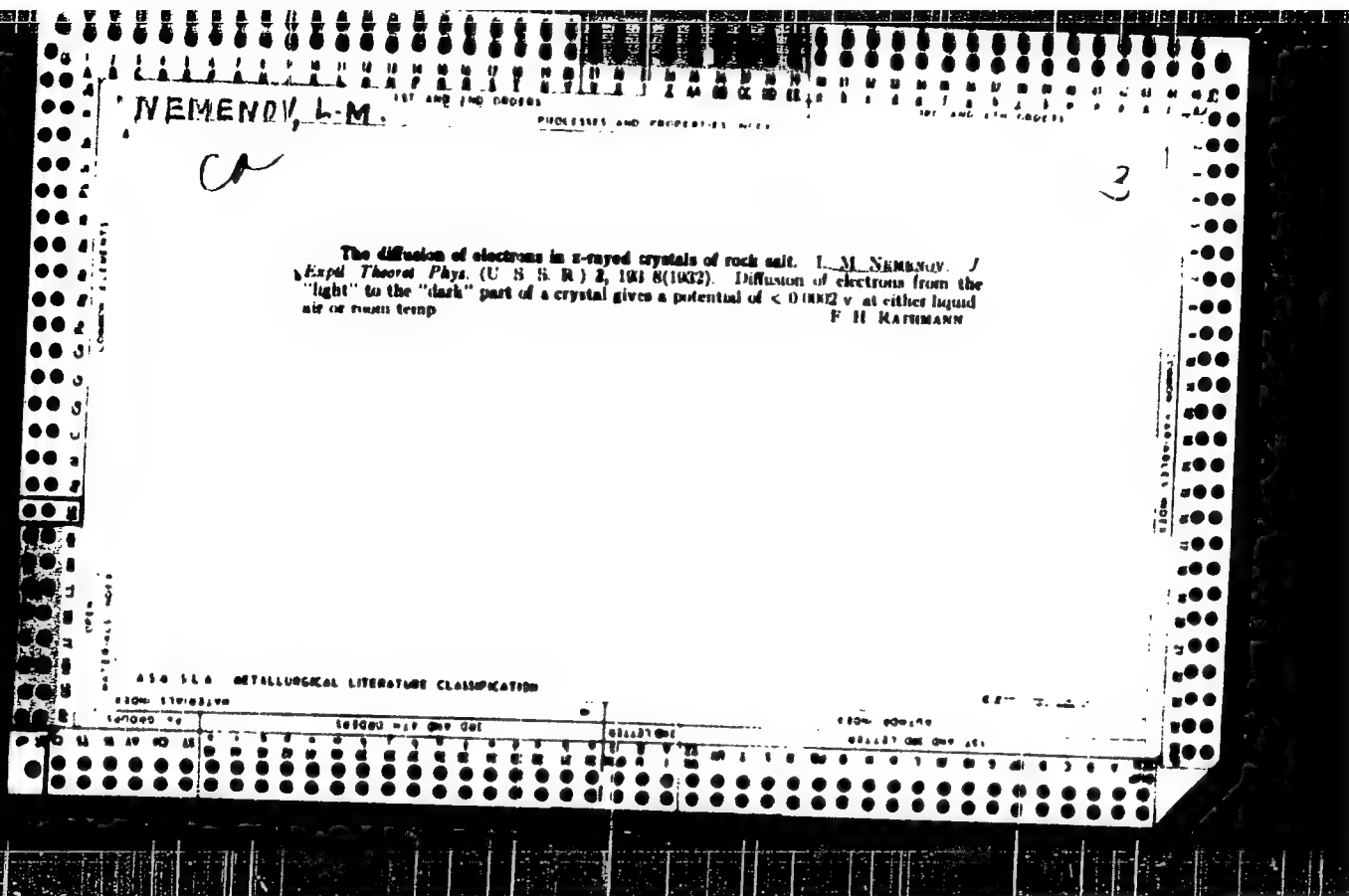


NEMENOV, E.M.

Solid (cuprous oxide) rectifiers in the high-vacuum field. D. N. NAMENIN AND
I. M. NUSIMOV *Physik. Z. Sowjetunion* 2, 120-125 (1952).—The relationship between
current and voltage is investigated in a system which consists of a Cu plate bearing a
layer of Cu₂O and as the other electrode, lead in. In a few cases the voltage rose as
high as 250 v and to avoid heating, a high-frequency current was used, the time inter-
val between pulses varying from 10^{-4} to 10^{-5} sec. This high fre-
quency was obtained by using a Heitkamp pendulum and a commutator constructed
especially for this purpose. The authors believe the results contradict the theory of
cold electron emission and support the Joffe-Frenkel gas theory. 11 Abstracts

APPROVED FOR RELEASE: 03/14/2001

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The photoelectric effect in the contact layer under the action of ultra-violet light
N. N. NASHIDOV AND L. M. NASHIDOV *J. Exptl Theoret Phys (U.S.S.R.)* 2, 170 (1932); *Physik. Z. Sowjetunion* 3, 20 (1933) In the contact Cu₂O-Zn ultra violet light drives the electrons from Cu₂O to Zn. F. H. RATHMANN

434 SLA METALLURGICAL LITERATURE CLASSIFICATION

3C

Photo- and dark-conductivities of cuprous oxide. D. NAKHAEV and L. NIKHAEV (Physikal. Z. Sovietunion, 1958, 7, 813-814). The non-potential of photo-electrons through the non-illuminated portion of polycryst. Cu_2O at liquid air temp. is attributed to the non-homogeneous nature of the Cu_2O reducing the life of the photo-electrons. The polarization of Cu_2O at liquid air temp. is similar to that of GaAs , and the leakage current becomes very low within 5 min. of applying a p.d. The distribution of potential indicates that a large p.d. is created at the Cu_2O -metal interface which diminishes under the influence of light, which, in the limit, renders the potential distribution linear. It is suggested that there is a highly-resistant surface film of unknown structure at the interface.

J. W. S.

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NEMENOV, L. M.

Artificial radioactivity induced by neutrons. I. V. Kurchatov, C. D. Latunchev, L. M. Nemenov and I. P. Selinov. Physik. Z. Sowjetunion 8, 589-94 (1935); cf. C. A. 29, 5738⁷, 6834⁴ - A study with a Geiger counter of the radioactivity induced by slow neutrons in Pd, Re and Os gave the following results. Pd: 4 periods, two of half lives 3 min. and 60 hrs. in addition to those found by Fermi; Re: 2 periods, one of 85 hrs. in addition to that found by Fermi; Os: a weak activity of a 40-hr half life.

Morris Muskat

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PROCESSING AND PROPERTIES MODEL																			
<i>ia</i> 2024. Blackening of Photographic Plates under the Influence of Positive Ions. [G. H. Mannum]. Phys. Zeit. d. Sowjetunion, 9, 2-3, pp. 121-122, 1958. In English.—The photographic effect of positive Li ions for energies up to 1000 eV is investigated. For energies of 1000 eV the sensitivity of "Schumann" plates differs very little from that of "Q" plates. In general, however, the degree of blackening of the "Schumann" plates, owing to the greater thickness of their sensitive layer, depends to a greater degree upon the energy of the ions than is the case with "Q" plates. A 53 J. S. G. T.																			
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222. Electron emission under action of positive ions. L. NIKENOV AND A. FUDURKO. *J. of Exp. and Theor. Phys. U.S.S.R.*, 8, 5, pp. 152-153, 1969. *In Russian.*—Electron emission was investigated from an Al surface under the action of a monochromatic beam of H^+ ions of energies between 3 and 30 eV. The electron energies were measured with the help of retarding potentials, and the maximum energy was found to increase with the energy of the bombarding ions.

PROCESSING AND PRIORITIES INDEX

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NEMENOV, L.M.

Design and construction of a mass-spectrograph I. M. Nomenov and A. S. Fedyrko. *J. Tech. Phys.* (U. S. S. R.) 9, 1879-82 (1939). A mass-spectrograph of the Aston type with a metal tube is described. It allows detection of mass differences of 0.05%. J. J. B.

A 10 51 A METALLURGICAL LITERATURE CLASSIFICATION

NEMENOV, L.

Soft component of cosmic rays at an altitude of 3250 m. A. I. Alikhanov, A. I. Alikhan'yan, L. Nemenov and N. Kocharyan. J. Phys. (U.S.S.R.) 8, 63 (1944) (in English).- By 3 different methods it was found that the experimentally detd. ratio of the soft component to the hard component of the cosmic rays varied with method and altitude from three distinct values of 1.1, 0.65 and 0.50 at 3250 m. to a single value of 0.35 at 960 m. It is concluded that the soft component contains particles with an ionizing power greater than that of relativistic particles, probably protons with an energy below 100 m.e.v.

F. H. R.

120-2-6/37

AUTHOR: Nemenov, L. M., Pustovoyt, Yu. M., and Fedorov, N. D.

TITLE: Measurement of the Proton Energy Spectrum in the Deflected Beam of a 1.5m Constant Frequency Cyclotron. (Izmereniye Energeticheskogo Spektra Protonov v Otklonennom Puchke Polutorametrovogo Tsiklotrona s Postoyannoy Chastotoy.)

PERIODICAL: Priroda i Tekhnika Eksperimenta, 1957, No.2., pp. 24 - 26 (USSR).

ABSTRACT: The deflected proton beam of a cyclotron has a well defined energy inhomogeneity. In the present article the authors give results of measurements of the mean energy distribution across the deflected beam. Protons were obtained from the acceleration of hydrogen ions. The mean proton energy was determined from range measurements in aluminium, for which the "range-energy" relation is very well known. The instrument consisted of a collimator, with 3mm diameter apertures, placed on a special chassis. The collimator was insulated and had separate electrical connectors. Two drums were placed behind the collimator, revolving independently of each other with respect to one axis. One drum had eight apertures each 8 mm in diameter, with filters of various thickness in seven of the apertures, Card 1/3 and a similar arrangement was provided for the other drum;

12-2-6/37
Measurement of the Proton Energy Spectrum in the Deflected beam
of a 1.5m Constant Frequency Cyclotron.

both drums were electrically coupled and had a common insulated input. The two windows which had no filters, one for each drum, were used to measure the full proton beam. A remote automatic control permitted to vary the positioning of the drums. Two methods of measurement of the mean ranges of protons in aluminium were used: in the first a variable thickness filter made of aluminium foil was placed across the beam path and the absorption curve was measured, giving the relationship between the number of protons hitting the collector and the thickness of the filter. The mean range could then be determined from the filter thickness at which the collector current was halved; in the second method no collimator foil was used so that the ion splitting of the molecular hydrogen was occurring at the aluminium filter of the first drum. The electron thus liberated was absorbed by the foil. Assuming the foil to be so thin as not to absorb the protons, its current could be assumed to be purely an electron one and equal to half the proton current at the collector. Two sensitive chopped DC amplifiers were used with the first method and only one such amplifier was found to be necessary with the second method (the maximum sensitivity was

Card 2/3

120-2-6/37

Measurement of the Proton Energy Spectrum in the Deflected Beam
of a 1.5m Constant Frequency Cyclotron.

10^{-10} amp). Measurements have shown that the mean proton
energy across the beam increases by approximately 3.7%.
One mechanical drawing of the instrument, one graph of
the mean proton energy in MeV against distance in mm and
the energy spectrum graph of the deflected beam for
the window of 3mm are given. There are no references.

SUBMITTED: September, 24, 1956.

ASSOCIATION: Institute of Atomic Energy of Academy of Sciences
of USSR. (Institut Atomnoy Energii AN SSSR.)

AVAILABLE: Library of Congress.

Card 3/3

AUTHOR: NEMENOV, L.M., KALININ, S.P., KONDRASHOV, L.F., MIRONOV, E.S., PA - 2194
 NAUMOV, A.A., PNASJUK, V.S., FEDOROV, N.D., CHALDIN, N.N.,
 SUBAKOV, A.A.

TITLE: A one-and-a-half meter cyclotron with constant frequency.

PERIODICAL: Atomnaya Energiya, 1957, Vol 2, Nr 1, pp 36 - 41.

Received: 3 / 1957

Reviewed: 3 / 1957

ABSTRACT: The building of this cyclotron was projected in 1945 and was completed in 1946. The first deuteron ray from this cyclotron was obtained in 1947. The accelerator was completely surrounded by a water jacket of 1 m thickness and a great number of operations which are dangerous because of radiation were remote-controlled. This cyclotron was used for the study of nuclear processes occurring in the cyclotron itself. Apart from deuterons, α -particles, and ions, also protons and multiply charged nitrogen ions were accelerated by means of this cyclotron.

The electromagnet: The magnetic chain consists of a closed frame of square cross-section with pole shoes. The operation diameter of the pole is 1500 mm. The electromagnet is air-cooled. Total weight is 330 t. By means of this electromagnet field strengths of up to 18.000 Oersted can be produced in the intermediate space between the pole shoes.

Card 1/3

The resonance system and the high frequency generator: The resonance

PA - 2194

A one-and-a-half meter cyclotron with constant frequency.

cycle of the cyclotron consists of duants and of two shortened co-axial quarter wave lines. This circuit is fed by a multiple cascade generator by two coaxial fields. A special modulator permits the impulselike and the impulseless feeding of the resonance circuit.

The central part of the cyclotron: The initial motion of the ions plays a very essential part in the accelerating process. The special computations carried out permitted the explanation of the dependence of the ion phase (on the occasion of the first accelerations) on the distance of the accelerating gap and on the potential difference between the duants. In 1953 the authors developed an archlike ion source of a gaplike type.

The magnetic field of the cyclotron and its correction: The character of the motion of the particles during their further acceleration is mainly determined by the magnetic field of the cyclotron. The constancy of the magnetic field was warranted by stabilization of the amperage in the coils of the electromagnet.

The acceleration chamber, the resonance lines, and the duants: are discussed next on the basis of drawings.

The vacuum system: The evacuation of the resonance line and of the

Card 2/3

PA - 2194

A one-and-a-half meter cyclotron with constant frequency.

acceleration chamber is warranted by three oil vapor pumps.

In conclusion the deflection system and the focussing of a bundle on to a distant target is discussed.

By means of this cyclotron protons were accelerated up to 12,2 MeV, deuterons up to 19,6, α -particles and nitrogen ions up to 39,2 and 120 MeV respectively.

ASSOCIATION: Not given.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress.

Card 3/3

Atomnaya Energiya
HIGH-ENERGY NUCLEAR PHYSICS: PARTICLE ACCELERATORS (CYCLOTRONS)

"History of the Development of the Cyclotron (Survey of the Literature),"
by L.M. Nemenov. Atomnaya Energiya, No 2, February 1957, pp 117-127.

On the basis of published work, a brief survey is given of the development of the elements of cyclotron installations. The fundamental apparatus of the most typical cyclotrons are described. The article is illustrated by photographs taken from the sources.

Bibliography of 25 titles.

Card: 1/1

Not in use. 1000.

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1/1 1. Ions 2. Cyclotrons 3. Gas-Instrumentation

Neiman, L. M.

120-5-3/35

AUTHORS: Mironov, Ye.S., Mironov, L.M., Zvyagin, S.B., and Meshcherov, R.A.

TITLE: An Application of a Ribbon Lens to the Focussing of the
External Beam of a Cyclotron (Primeneniye lentochnoy
linzy dlya fokusirovki vypushchennogo puchka tsiklotrona)

PERIODICAL: Priroda i Tekhnika Eksperimenta, 1957, No.5,
pp. 18 - 21 (USSR)

ABSTRACT: An electrostatic focussing device for the external beam
of the 1.5 m cyclotron (Ref.1) is described. The system is
shown in Fig.1 and consists of a system of molybdenum ribbons.
The system focusses the beam in the vertical direction focussing
in the perpendicular direction being carried out by a magnet
(not described in this paper). Fig. 2 indicates the performance
of the focussing device. The measurements obtained using 12 Mev
protons. The ribbons lens increases the current density by a
factor of 10. Particle losses did not exceed 10%. The current
density at the target was 15 $\mu\text{A}/\text{cm}^2$. V.I. Bernabevskiy,
Ye.A. Minin and Yu.M. Pustovoyt assisted in this work. There
are 7 diagrams and 1 Slavic reference.

SUBMITTED: December 21, 1956.

AVAILABLE: Library of Congress
Card 1/1

Nemenov, L.M.

AUTHOR

MIRONOV E.S., NEMENOV L.M.

PA 2671

TITLE

Investigation of slow electron emission induced by high energy protons. (Issledovaniye, emissii medlennykh elektronov pod deystviyem protonov bol'shikh energiy, Russian.)

PERIODICAL

Zhurnal Eksperim. i teoret. Fiziki 1957, Vol 32, Nr 2, pp 269 - 273 (USSR)

Received: 5/1957

Reviewed: 6/1957

ABSTRACT

The slow electrons were knocked out from thin foils in the direction of motion (coefficient γ_1) and in an opposite direction (coefficient γ_2). The authors determined the dependence of the coefficients γ_1 and γ_2 on the energy of the impinging protons within the interval of from 2 to 7.3 MeV. Investigations were carried out on aluminium and nickel. The protons were furnished by 1¹/₂ m cyclotron with focussing bundle. On this occasion hydrogen molecules were accelerated to ~14.7 MeV and these molecules were then torn apart on the occasion of a collision with a thin aluminium foil.

Measuring method: The 6 basic circuits enabling the measuring of all orders of magnitude are shown in a drawing. For reasons of safety all operations were carried out by remote control. Also the apparatus for electric measuring is discussed on the basis of a drawing.

Measuring Results: Already at a field strength of ~200 ϕ sted

CARD 1/2

Investigation of slow electron emission induced by high energy
protons. PA - 2671

the electron component of the current was lacking nearly completely. In the case of final tests magnetic field strength was increased to ~ 800 Oersted. The values applied to the various potentials are given. A diagram demonstrates the dependence of the coefficients γ_1 and γ_2 on the energy of the incident protons for aluminium and nickel. In the case of the proton energies of from 2 to 7.3 MeV used here the coefficients of electron emission for Al and Ni differ only little and change in diameter from 1.8 to 0.5. In the direction of the incident proton bundle more electrons are knocked out than in the opposite direction. This difference amounts to 20% for Al and Ni. Inaccuracy on the occasion of the determination of γ amounted to a maximum of ± 10 %. All experiments were carried out in 1953. (5 illustrations)

ASSOCIATION: Institute of Atomic Energy of the Academy of Science of the USSR.
PRESENTED BY: -
SUBMITTED: 24.9. 1956.
AVAILABLE: Library of Congress.

CARD 2/2

1931-1935 - M

AUTHOR: Meneney, L. N.

72-2-1/77

TITLE: The Historical Development of the Cyclotron (Istoriya razvitiya tsiklotrona).
Review of Publications (Obzor literatury).

PERIODICAL: Atomnaya Energiya, 1958, 4, No. 2, pp. 117-127 (USSR).

ABSTRACT: The basic operational principle of the cyclotron was elaborated for the first time about thirty years ago.
In 1931 Lawrence and Livingstone finished the construction of the first model for laboratory use, the pole diameter of which was 100 mm, and which was operated still without high tension. With a perfected model the two authors obtained protons with an energy of 1.2 MeV. The output current amounted to 10^{-7} A.
In 1932 another improved apparatus already produced deuterons with an energy of 3.6 MeV.
With the same appliance protons with 4.8 MeV were obtained after incorporation of a few perfections.
In 1934, an apparatus was constructed, which produced protons with 5 MeV and in 1935 an ion current of 10^{-5} A. was obtained with it.
In 1936 an apparatus was built (diameter of the dees of 700 mm) which permitted the generation of 5 MeV deuterons. For the first time the

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The Historical Development of the Cyclotron.
Review of Publications.

19-2-1/30

beam was made to pass out of the chamber through a thin platinum window with a thickness of 5μ . The high-frequency generator employed here had an output power of about 25 kW. The potential difference between the dees amounted to 50 - 100 kV.

In 1937, Lawrence and Cocksey constructed an entirely new model, which permitted the generation of 9 MeV - deuterons with a 100μ range. In the same year, the first European cyclotron was built in Leiden, which possessed an electromagnet with a diameter of 100 cm. The year 1938 proved to be decisive for further development. The $\lambda/4$ resonant vacuum resonance line was employed for the first time for the purpose of applying the high voltage to the dees. Deuterons with an energy of 9.7 MeV were obtained at a maximum of 1μ . The next investigations, such as "Rigid Focussing", "Correction of the Magnetic Field" etc. date from that time. A 1.5 m cyclotron was built in 1939. The resonance conductors were still very complicated at that time. The deflection system was already mounted between the dees. A perfected capillary ion source was employed already.

Alvarez accelerated C^{16} ions to 50 MeV in 1940.

Condid accelerated C^{16} ions to 85 MeV and O^{16} ions to 100 MeV in the cyclotron in Berkeley in 1942.

Card 2/4